

Air Quality Maritime Working Group Meeting

USE OF LOW SULFUR DISTILLATE FUELS IN OCEAN-GOING VESSELS



April 28, 2010
Oakland

California Environmental Protection Agency



Air Resources Board

Overview

- Background
- Implementation Status
 - Enforcement and Compliance
 - Use of Exemptions and Noncompliance Fees
 - Vessel Rerouting
- Coordination with IMO Emission Control Area
- Summary

Background



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Switching to a Distillate Fuel Results in Immediate Emissions Benefits

■ Significant emission reductions from switching from 2.5%S HFO to 0.1%S MGO

- Diesel PM: 83%↓
- SOx: 96%↓
- NOx: 6%↓



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Ship Fuel Rule is Critical to Meet California's Air Quality Goals

- Reduces potential cancer risk in coastal communities
- Reduces other health impacts
 - Premature death, asthma, lost work days
- Necessary to achieve state and federal ambient air quality standards for ozone and particulate matter

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Clean Fuel Requirements

- Requires use of cleaner fuels within 24 nautical mile zone of the California coastline
- July 1, 2009
 - use marine gas oil (averages 0.3% sulfur), or
 - use marine diesel oil with a 0.5% sulfur limit
- January 1, 2012
 - use marine gas oil with a 0.1% sulfur limit, or
 - use marine diesel oil with a 0.1% sulfur limit
- Applies to main and auxiliary engines, and auxiliary boilers

A map of California showing the 24 nautical mile zone along the coast. Major ports are marked with black dots and labeled: Humboldt, Sacramento, Redwood City, San Francisco, Oakland, Stockton, and San Diego. A legend in the top right corner indicates that a black dot represents a 'Major Port' and a light blue shaded area represents the '24 nm Zone'. The map includes latitude and longitude coordinates for several points: 34° 43' N, 121° 12' W; 33° 50' N, 118° 58' W; and 32° 65' N, 117° 81' W. A scale bar at the bottom indicates distances from 0 to 160 nautical miles. A compass rose is also present.

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- This map of California illustrates the 24 nm Zone and Major Ports. The 24 nm Zone is highlighted in light blue along the coast. Major ports are marked with black dots. The map includes a legend, a scale bar (0 to 160 Nautical Miles), and a north arrow. Key locations labeled include Humboldt, Eureka, Sacramento, Redwood City, San Francisco, Richmond, Oakland, Stockton, Hueneme, Los Angeles, Long Beach, Avalon Catalina, and San Diego. Coordinates are provided for two points: 34° 43' N, 123° 12' W and 33° 50' N, 118° 58' W.

Includes Provisions to Assist with Implementation

- **Essential Modifications Exemption**
- **Safety Exemption**
- **Temporary Experimental or Research Exemption**
- **Noncompliance Fee**
 - option to pay a noncompliance fee under special circumstances such as having unplanned redirection at sea

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Essential Modifications Exemption

- **Provision is granted when vessel operators/owners demonstrate that they cannot meet the fuel requirements without “essential modifications” to the vessel**
 - regulation provides a definition of an “Essential Modification”
 - exemption is granted by ARB based on a demonstration of need
 - vessels must meet requirements of exemption
 - application process takes about 30 to 45 days

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Safety Exemption

■ Safety Exemption applies if

- the master determines that compliance would endanger the safety of the vessel, crew, cargo or passengers
- due to severe weather conditions, equipment failure, fuel contamination, or other extraordinary reasons beyond the master's reasonable control
- applies only as long and to the extent necessary to secure safety
- master takes all reasonable precautions to avoid or minimize repeated claims of exemption
- master notifies ARB of a safety exemption claim
 - within 24 hours after incident
 - submits documentation within 4 working days after notification

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Temporary Experimental or Research Exemption

- ### ■ Provided for research projects that will advance the state of knowledge of exhaust control technology or characterization of emissions
- Allows for the use of noncompliant fuel
 - Applicant must provide progress reports and all test data and other project results
 - Exemption possible for up to 3 years, with an extension possible
 - Application process takes about 30 days

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Noncompliance Fee Provision

- Allows ship operator to comply with the regulation by paying a fee under certain limited situations rather than using compliant fuel
 - Unplanned redirection, inability to purchase complying fuel, Inadvertent purchase of defective fuel, infrequent visitor needing modifications, Inability to complete necessary modifications (if not using essential modifications provision)
- Must notify ARB prior to entering 24 nm zone
- Must Demonstrate Need to Use the Provision
- Fee assessed per port visit and start at \$45,500

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Implementation Status



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Enforcement and Compliance

- **ARB inspectors board vessels at dockside throughout California**
 - Fuel samples collected for testing and analysis
 - Records and fuel switching procedures reviewed
- **About 230 inspections since rule became effective on July 1, 2009***
 - Fourteen potential violations under investigation (~94% compliance)
 - No fines issued to date
- **Most potential violations involve fuel switching within regulated zone**

*Summary from July 1, 2009 to March 30, 2010

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Essential Modifications Exemptions*

- **Majority of applications are for tanker boilers**
- **Fewer new applications at this stage**
- **449 applications received**
 - 421 completed, 28 under review
- **365 applications approved**
 - 56 partial approvals (generally for boilers only, with denials for main and auxiliary engines)

*Summary from July 1, 2009 to March 30, 2010

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Summary of Safety Exemptions & Noncompliance Fees*

Safety Exemptions (per month)	
July 2009	1
August 2009	2
September 2009	1
October 2009	1
November 2009	2
December 2009	4
January 2010	5
February 2010	2
March 2010	5
Noncompliance Fees	
From July 1, 2009 to March 30, 2010	2

*Summary from July 1, 2009 to March 30, 2010

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Impacts on Vessel Routes

- Increasing number of vessels transiting through the Pt. Mugu Sea Range
- Best for air quality, vessel safety, and Naval operations if vessels use historic shipping lanes, especially in the Santa Barbara Channel
- Actively working with stakeholders to address concerns

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Coordination with IMO Emission Control Area



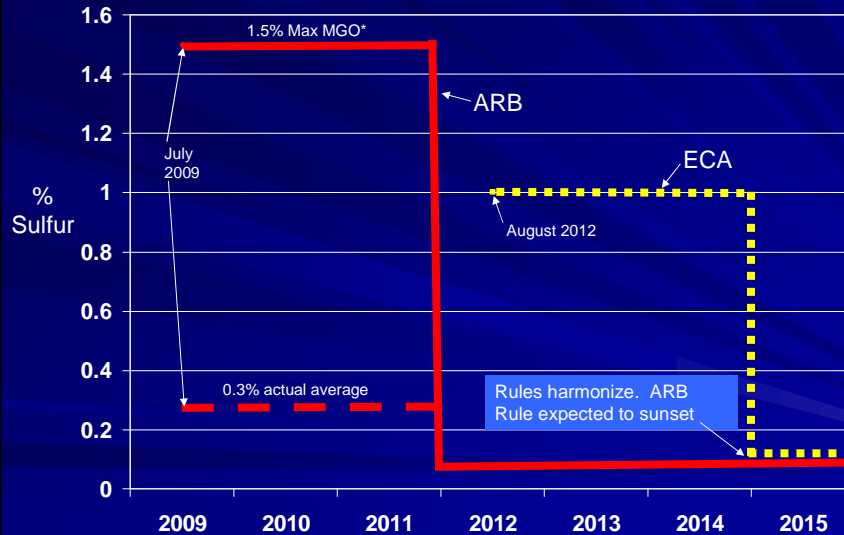
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IMO Emission Control Area Created in US and Canada



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ARB and ECA Fuel Sulfur Requirements



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Summary

- Regulation results in large emission reductions and significant public health benefits
- Excellent compliance with the regulation
- We are committed to working together to address any implementation issues



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